Contact Details:
Tel office: +264 61 379 500
Fax office: +264 61 22 5371
E-mail: nabdesk@nab.com.na
Website: www.nab.com.na

Physical address:
Agricultural Boards' Building
30 David Hosea Meroro Road
Windhoek
Namibia

Postal address:
PO Box 5096
Ausspannplatz
Windhoek
Namibia

NAMIBIAN AGRONOMIC BOARD

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AGRONOMY AND HORTICULTURE DEVELOPMENT DIVISION

RESEARCH AND DEVELOPMENT SUBDIVISION

RESEARCH REPORT

GROUNDNUTS VALUE CHAIN ANALYSIS: THE CASE OF NAMIBIA

AUGUST 2025

NAMIBIAN AGRONOMIC BOARD

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LIST OF ACRONYMS

AfCFTA	African Continental Free Trade Area
GAP	Good Agricultural Practices
GMO	Genetically Modified Organism
NAB	Namibian Agronomic Board
NSA	Namibia Statistics Agency
MAFWLR	Ministry of Agriculture, Fisheries, Water, and Land Reform

EXECUTIVE SUMMARY

This study analyses the groundnut value chain in Namibia, focusing on its structure, key actors, challenges, and opportunities. The objectives were to determine the area under cultivation, production tonnage, and groundnut productivity, and to assess the degree of value addition at each stage of the value chain.

Data were collected through structured questionnaires, key informant interviews, and stakeholder consultations involving producers, input suppliers, traders, processors, extension officers, and research institutions across the Central, Karst, Kavango, North-Central, and Zambezi production zones. Secondary information was sourced from research reports, published studies, and statistical databases. The data were analysed to assess the relationships among value chain actors, the flow of goods and services, and the enabling environment influencing groundnut production and trade in Namibia.

The findings reveal that groundnut production is predominantly carried out by small-scale producers, 59% of whom are women. Production is mainly rainfed, with limited use of centre-pivot and sprinkler irrigation systems. Farm sizes range from 0.3 to 100 hectares, with most producers targeting local markets and, through contractual arrangements, exporting to South Africa. Groundnut production is generally profitable due to relatively low input requirements compared to crops such as maize. However, yields vary widely, ranging from 0.1 to 6.0 tons per hectare, depending on agronomic practices, irrigation, and seed quality. The national average output is estimated at **340 tons** annually.

Most producers (77%) rely on farmer-saved seed or local markets, while only a small proportion use certified varieties, often imported from South Africa. Productivity is constrained by limited access to mechanisation, high input costs, and erratic rainfall. Processing capacity within the country remains minimal, resulting in most groundnuts being sold raw at farm gates or local markets.

Despite these challenges, the sector presents significant opportunities for upgrading through the promotion of certified seed systems, strengthening farmer organisations, improving post-harvest handling and processing, and enhancing research and development. Strategic collaboration between government institutions, the private sector, and research bodies can unlock the full potential of the groundnut subsector, contributing to food security, income generation, and rural economic development in Namibia.

1. INTRODUCTION

Groundnut (*Arachis hypogaea L.*) is the fifth most widely cultivated edible oil crop globally, following soybean, seed cotton, rapeseed, and sunflower (Prasad et al., 2010). It is a versatile and highly adaptable leguminous crop with significant potential for production across Namibia's diverse agroecological zones. Groundnuts contribute to food and nutrition security through their edible oil and protein-rich kernels, while also serving as a valuable feed source for livestock and aquaculture. Globally, groundnut is cultivated on approximately 30 million hectares, with an estimated annual grain production of 49 million tonnes (Prasad et al., 2010).

Promoting legume crop diversification is essential for achieving sustainable agricultural development. Legumes not only enhance human diets due to their high nutritional value but also improve soil fertility through biological nitrogen fixation (Stagnari et al., 2017). Namibia's agricultural sector is gradually transitioning from traditional subsistence farming to a more market-oriented, agribusiness approach. This shift seeks to empower farmers to produce surplus food for both household consumption and national food security, while also generating income. In this context, expanding the production of grain legumes, such as groundnuts, can help meet consumer demand for high-protein, health-conscious food products and support national strategies to achieve food self-sufficiency (Stagnari et al., 2017; Saikia et al., 2025).

In Namibia, groundnuts are cultivated on approximately 983 hectares, producing around 375 tons annually (Reinhold-Hurek et al., 2023; Valombola et al., 2019). The crop is mainly grown under rainfed conditions across several regions, including Zambezi, Kavango East and West, Otjozondjupa, Oshikoto, Oshana, Ohangwena, Omusati, and Kunene. However, national average yields remain low at about 400 kg/ha (0.4 t/ha), which is significantly below the continental average of 1,000 kg/ha (1.0 t/ha) and the global average of 1,650 kg/ha (1.65 t/ha) (Reinhold-Hurek et al., 2023; Valombola et al., 2019).

Enhancing groundnut production in Namibia offers a viable opportunity for agricultural diversification and the creation of sustainable livelihoods by introducing climate-resilient, market-oriented varieties. Groundnut is well-suited to Namibia's harsh environmental conditions, demonstrating resilience to climate change and variability. Its integration into the formal crop market could support food security, income generation, and improved soil health.

This study aimed to identify and analyse the key actors, functions, supporters, and influencers within Namibia's groundnut value chain. It also examined the development interventions needed to strengthen and support the value chain. The study focused on all major groundnut-producing agroecological zones and employed a participatory approach through stakeholder engagement. Data collection was conducted through structured survey questionnaires and focus group discussions. Participants included

producers, processors, marketers, traders, socio-economists, agronomists, and plant breeders, each playing a critical role in mapping the value chain and informing strategies for building a more efficient, inclusive, and sustainable groundnut market in Namibia.

1.1. Problem statement

Climate change, erratic rainfall, low soil fertility, and poor nutrient content in major food items are among the most significant challenges to food security and sustainable food production in Namibia. Currently, the country imports approximately 950 tons of prepared groundnuts and 19 tons of shelled groundnuts (FAOSTAT, 2021), along with other groundnut products under HS code 1202, totaling an annual average of 94.5 tons, valued at N$2,353,529 (NSA, 2022). This trend indicates strong, growing domestic demand for groundnuts. Despite Namibia's potential for groundnut production, the subsector is constrained by several challenges, including low production volumes, limited area under cultivation, limited access to improved varieties, the absence of a formalised market, and limited value addition. Therefore, there is an urgent need to enhance production capacity, expand cultivation areas, and introduce drought-tolerant, high-yielding, market-preferred groundnut varieties. A comprehensive analysis of the groundnut value chain, combined with targeted development interventions, can strengthen local production systems, enhance value addition, and improve income generation for farmers, ultimately contributing to food security among Namibian producers.

1.2. Objectives of the study

This study aims to determine the area under cultivation (ha), production tonnage, and groundnut productivity in Namibia, and to analyse the degree of value addition at each stage of the groundnut value chain. The specific objectives of the study are:

- ✓ To assess the current status of groundnuts' value chain in Namibia, including production, storage, value addition, and marketing.
- ✓ To identify the constraints and opportunities in groundnut production and marketing.
- ✓ To provide recommendations for interventions to stimulate the growth of the groundnut industry in Namibia.

1.3. Significance of the study

The establishment of a comprehensive and sustainable groundnut value chain, including production, storage, processing, and marketing, required an initial detailed value chain analysis. This was undertaken through consultations with groundnut value chain actors, including producers, processors, and traders, to estimate production volumes and values, and to identify key challenges and opportunities as perceived by stakeholders.

Therefore, this study analysed the groundnut value chain with a focus on both domestic and international markets. Its findings aim to promote agripreneurship, enhance local production, and encourage formal market participation by producers, processors, and traders.

Furthermore, the study sought to reduce reliance on imports, improve livelihoods, support the development of drought-adaptive varieties, strengthen national food security, and promote overall economic growth. It also emphasises the role of cereal-legume cultivation in improving soil fertility and boosting groundnut competitiveness in domestic, regional, and international markets.

2. METHODOLOGY

A practical stakeholder consultation approach was employed in this study. A combination of survey questionnaires and group discussions was conducted through a participatory research approach to ensure inclusive stakeholder engagement. A mixed-method research design was adopted, incorporating both quantitative and qualitative data collection tools. Specifically, structured questionnaires with both closed and open-ended questions were administered to key respondents, including producers, processors, and traders.

Additionally, all relevant stakeholders and key informants were engaged through in-depth group and individual interviews. Telephone interviews were also used to follow up on questions and to obtain supplementary information not captured during the primary data collection phase.

2.1. Sample size

A target sample population size of a total of 70 respondents comprised of producers (50), traders (10), and input suppliers (10), whereby seven were representatives from each of the selected crop-growing regions **(Table 1)**.

Furthermore, related production data was collected to establish an accurate baseline for future reference. **Table 1** shows the sample population per production zone.

Table 1: *Sample population size in each production zone*

Production Zones	Regions	Sampled respondents			Total
		Producers	Traders	Inputs suppliers	
Karst	Otjozondjupa	5	1	1	7
	Oshikoto	5	1	1	7
Kavango	Kavango East	5	1	1	7
	Kavango West	5	1	1	7
North Central	Ohangwena	5	1	1	7
	Oshana	5	1	1	7
	Omusati	5	1	1	7
	Kunene	5	1	1	7
Zambezi	Zambezi	5	1	1	7
Central	Omaheke	5	1	1	7
Total number of respondents		**50**	**10**	**10**	**70**

2.2. Study area

The groundnut value chain analysis study encompassed five (5) production zones in Namibia, namely Karst, Kavango, North Central, Zambezi, and Central zones, comprising ten (10) key crop-producing regions: Omusati, Oshana, Ohangwena, Kavango West, Kavango East, Zambezi, Oshikoto, Kunene, Omaheke, and Otjozondjupa **(Figure 1)**.

These regions represent a diverse range of agroecological conditions critical to understanding the potential and constraints of groundnut production. The mean annual rainfall across these zones varies significantly, ranging from approximately 650 mm in the Zambezi Region to less than 200 mm in the arid Kunene Region (Awala et al., 2019), highlighting the varying climatic challenges and opportunities for crop production within the study area.

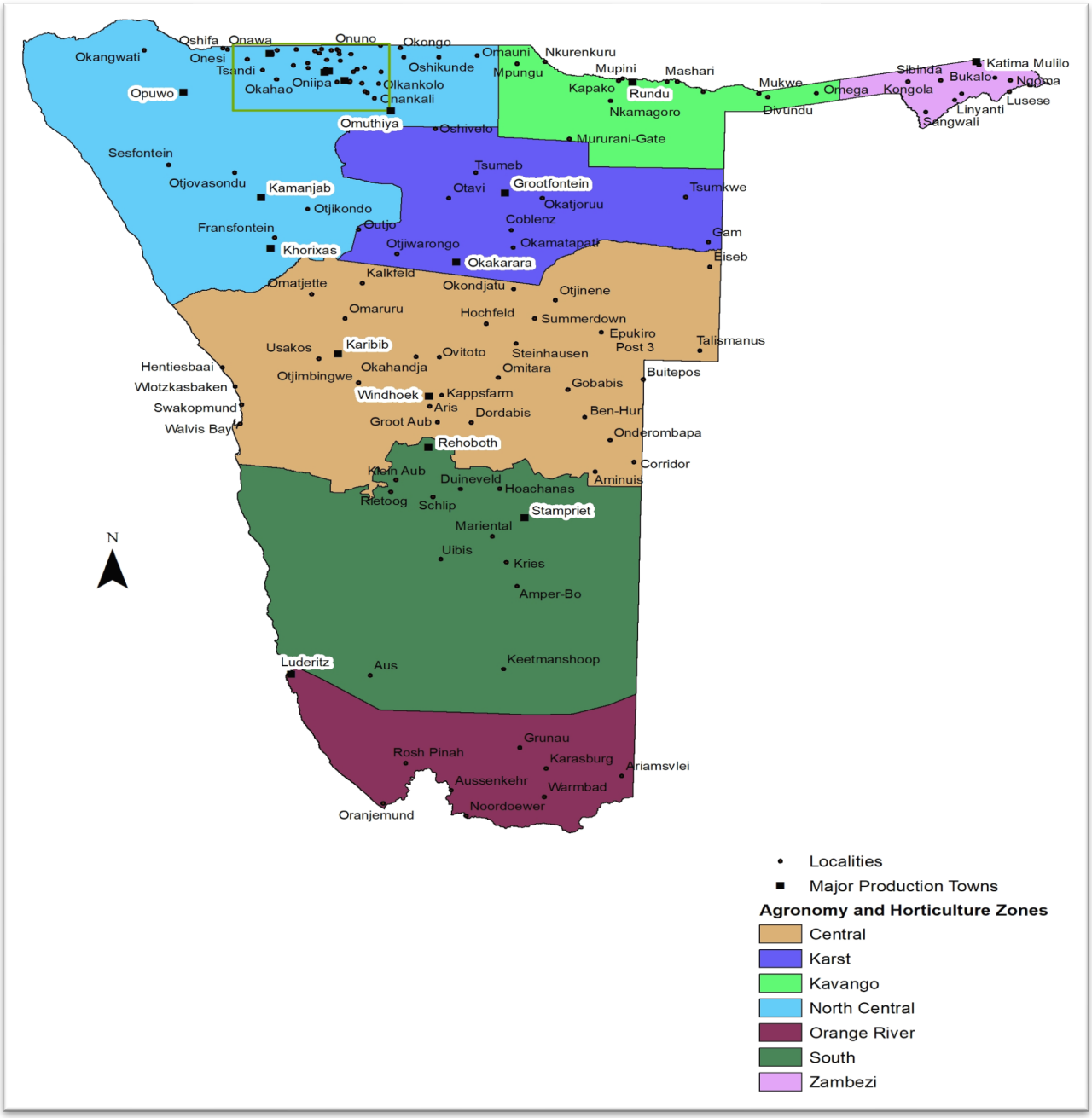

Figure 1: *Namibian map (Source: NAB, 2023)*

2.3. Data collection and analysis

Data were collected through structured interviews with groundnut value chain actors, including producers, input suppliers, processors, and traders, as well as consultations with other local stakeholders and extension officers. A literature review was also conducted to support the findings. A descriptive analysis in Microsoft Excel was used to identify trends and key characteristics of the value chain. The results, presented through a value chain mapping model, highlighted challenges and informed potential solutions.

3. RESULTS AND DISCUSSIONS

This section presents the key findings from the analysis of the groundnut value chain in Namibia.

3.1 Demographic characteristics of groundnut producers

The study revealed a gender imbalance in participation, with approximately 59% of respondents being female and 41% being male **(Table 2)**. This highlights the significant role women play in groundnut production, particularly in smallholder systems. Women in Namibia are actively engaged across the value chain, from land preparation and planting to harvesting, processing, and marketing. These findings are consistent with regional trends, where groundnut is commonly regarded as a "women's crop" (Ngoma-Kasanda & Sichilima, 2016). The prominence of women in the sector highlights the importance of designing gender-responsive interventions. Such measures should include improved access to agricultural inputs, credit facilities, land tenure, and extension services. Strengthening women's participation and capacity in these areas is key to enhancing productivity and unlocking the full potential of the groundnut value chain (Tyroler, 2018).

The study further indicated that the majority of participants fall within the age groups of 40 to 59 years and 60 years and above **(Table 2)**. This age distribution reflects findings from other sub-Saharan African countries. For instance, in Togo, over 60% of groundnut producers are aged between 41 and 60 years (Banla et al., 2018); in Burkina Faso, 65% are between 35 and 60 years (Sinare et al., 2021); and in Kenya, the average age of groundnut household heads is 46 years, with most aged between 36 and 55 (Onyuka et al., 2016). While this older demographic brings a wealth of experience and traditional knowledge, it also raises concerns about the sector's long-term sustainability. The ageing producer base highlights the need for age-sensitive strategies to attract and retain younger farmers. These may include capacity-building programmes, access to finance and inputs, agricultural mechanisation, and the development of youth-friendly market linkages (AGRA, 2015).

Table 2: *Socio-demographic information of the respondents*

Variable	Categories	N = 51	%
Gender	Female	30	59
	Male	21	41
Age-group	< 30	2	3.9
	30 - 39	7	13.9
	40 - 49	14	27.4
	50 - 59	15	29.4
	> 60	13	25.4

3.2 Groundnut production and output Information

This section outlines key findings on groundnut production and output, focusing on land area under production, yield performance, and factors influencing productivity. The results offer valuable insights for prevailing production practices and identify areas requiring improvement to enhance production efficiency and sustainability.

3.2.1 Production practices and groundnut seasonal calendar

Groundnut production in Namibia follows a distinct seasonal cycle that aligns with the country's rainfall patterns. In open field systems, planting commences with the onset of rains, typically between mid-October and mid-January, when soil moisture is sufficient for germination. Most producers (77.2%) rely entirely on rainfall, while 11.3% use centre-pivot irrigation in the Central and Karst zones, and another 11.3% use sprinkler irrigation, particularly in the North Central zone **(Figure 2).**

Survey results further indicate variability in farming systems. Approximately 42% of producers adopt organic systems, relying on natural soil fertility and ecological processes without synthetic inputs. In contrast, 12% practice inorganic farming, utilising chemical fertilisers and pesticides, although fertiliser application is primarily directed towards maize in mixed cropping systems. Another 13% use mixed systems that integrate organic and inorganic practices, while 33% of respondents did not identify with any of these categories.

Groundnut develops through the mid-season (January - March), a period during which weeding and pest management are critical. Weed control is implemented through herbicide application as well as by

manual and mechanical methods. Threshing typically takes place in May, followed by marketing between May and June, as groundnuts are rarely stored after harvest.

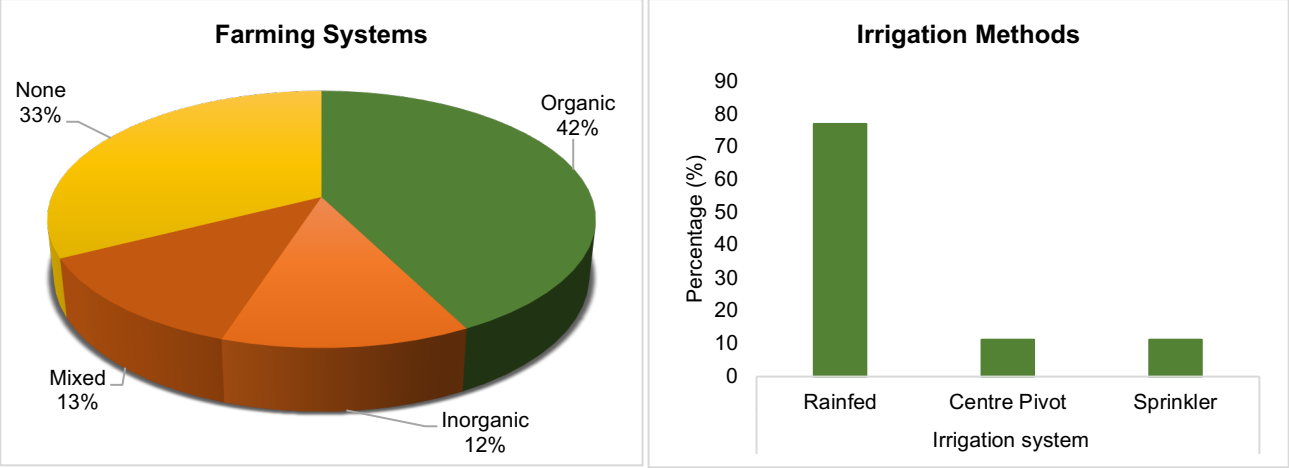

Figure 2: *Farming systems and irrigation methods among surveyed producers*

Table 3 below presents the groundnut production calendar, highlighting key activities across the different stages of the production cycle.

Table 3: *Groundnut seasonal calendar*

Activity	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Land preparation									
Planting									
Weeding									
Fertilization									
Pest and disease management									
Harvesting									
Threshing									
Storage									
Marketing									

3.2.2 Land area under groundnut production

The land area allocated to groundnut production in Namibia varies considerably across production zones, shaped by agroecological conditions, rainfall distribution, and farm size. Most producers dedicate between 0.3 and 3 hectares per household, although some commercial farms cultivate up to 100 hectares. Overall, groundnuts occupy a relatively small share of total arable land, reflecting their role as a supplementary crop within mixed farming systems **(Figure 3)**.

The Central Production Zone accounts for the largest share, with 255 hectares under cultivation (53% of the national area). This dominance is driven by large-scale commercial producers who benefit from mechanisation, better infrastructure, and access to markets. The Karst Zone follows with 180.3 hectares (38%), supported by both smallholder and commercial producers taking advantage of fertile soils and relatively reliable rainfall **(Figure 3)**.

In contrast, the Kavango, North Central, and Zambezi Zones are dominated by smallholders with an average of 1 hectare per household. Their limited production areas reflect constraints such as restricted land access, inadequate inputs, and limited mechanisation. Nevertheless, these zones present significant potential for expansion through interventions such as improved seed systems, access to finance, and extension support.

These findings highlight the regional disparities in production scale and emphasise the need for tailored strategies to unlock growth in each zone.

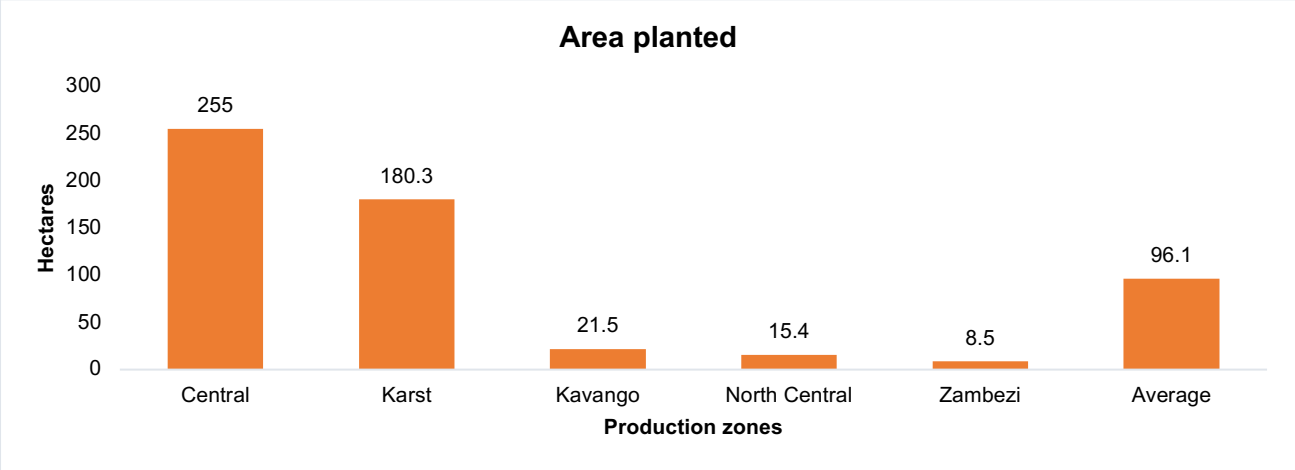

Figure 3: *Area cultivated for groundnut (ha) per production zone*

3.2.3 Production quantity

Adequate irrigation, good agronomic practices, and the use of certified seed are key determinants of crop productivity and production (Mani & Jari, 2021; Martinson, 2009). **Figure 4** below illustrates the average groundnut quantities produced per production zone, revealing distinct variations in output. These differences are primarily attributed to differences in seed quality and access to irrigation.

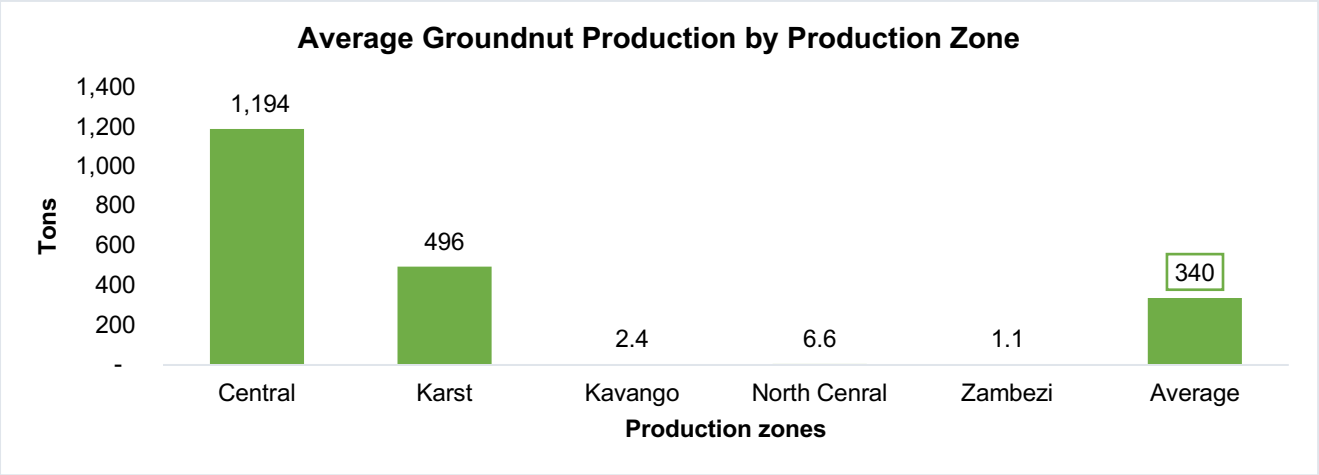

Figure 4: *Average groundnut production (in tons) across different production zones in Namibia*

Table 4 shows yield differences between certified and unimproved groundnut varieties cultivated in Namibia. Certified varieties imported from South Africa, Akwa, Sellie, Kwartz, and Anel, demonstrate significantly higher yield potential compared to local unimproved varieties. Under irrigation, certified varieties yield 2.0 to 6.0 tons per hectare, while unimproved local varieties yield only 0.8 to 0.1 tons per hectare.

Among the certified varieties, Akwa records the highest potential yield range (2.0 - 6.0 t/ha under irrigation and 0.7 - 1.0 t/ha under dryland conditions), indicating strong adaptability under different production environments. Sellie and Anel also show consistent performance with yields between 2.0 and 4.0 t/ha, while Kwartz exhibits slightly lower yields (1.0 - 3.0 t/ha). In contrast, local unimproved varieties perform poorly, particularly under dryland conditions, where yields range between 0.1 - 0.4 t/ha. This yield gap underscores the importance of adopting improved, certified seed varieties, supported by appropriate agronomic management and irrigation systems, to enhance productivity.

Table 4: *Estimated yield and status of groundnut varieties cultivated in Namibia*

Variety	Origin	Status	Expected Yield per Hectare (t/ha)
Akwa	South Africa	Certified	Irrigation 2.0 – 6.0 Dry land 0.7 – 1.0
Sellie	South Africa	Certified	Irrigation 2.0 - 3.0
Kwartz	South Africa	Certified	Irrigation 1.0 – 3.0
Anel	South Africa	Certified	Irrigation 2.0 – 4.0
Local (Unimproved)	Namibia	Not Certified	Irrigation 0.8 – 1.0 Dry land 0.1 – 0.6

Source: Survey Data, 2025

Overall, the data in **Table 4** indicate that Namibia's groundnut yield potential remains underexploited, mainly due to limited access to certified seed, insufficient irrigation infrastructure, and reliance on rainfed production systems. Consequently, Namibia's average groundnut output among surveyed producers is estimated at 340 tons annually **(Figure 4)**, reflecting significant production potential constrained by existing farming practices.

Recent studies confirm that reliance on unimproved crop varieties results in lower yields. Liang et al. (2024) found that adopting early-maturing and improved crop varieties significantly enhances agricultural productivity and climate resilience, especially in rainfed systems. This emphasises the importance of certified seed systems and agronomic support to bridge Namibia's groundnut yield gap. Strengthening seed systems, promoting improved varieties, and enhancing agronomic support services are crucial to closing this productivity gap and increasing national output.

3.2.4 Production and input costs

Groundnut production and input costs vary depending on area planted, irrigation access, input supply, and farming practices (Ramoliya & Prajapati, 2022). In terms of affordability, 63.2% of the respondents rated production costs as high, while 36.8% considered them affordable. On average, costs are about N$9,550 per hectare, mainly covering labour and diesel. Seed is another significant expense, priced at approximately N$1,050 per 25 kg, with seeding rates of 80 – 100 kg/ha translating to N$3,360 – N$4,200 per hectare. These figures highlight the substantial investment required, particularly for producers lacking access to mechanisation, irrigation, or certified seed, ultimately reducing profitability and competitiveness.

3.3 Regulatory compliance and protection

3.3.1 Seed source and certification

Certified seed plays a vital role in enhancing agricultural productivity and promoting sustainable cultivation practices (Kerned, 2024). Findings from this study indicate that groundnut seed sourcing in Namibia remains informal, with 77% of the farmers relying on saved seed, local markets, and farmer-to-farmer exchanges. In contrast, only 23% of respondents reported using certified groundnut seed **(Figure 8)**.

The Akwa variety, imported from Triotrade Gauteng (Pty) Ltd in South Africa, is predominantly used by large-scale producers of commercial groundnuts. This variety is distributed through a sale-and-repurchase model, which provides producers with access to improved seed, guaranteed market uptake

at a minimum price, and complementary extension services (Claassen, 2024). In addition to Akwa, other certified seeds, such as Sellie, Kwartz, and Anel, are imported and utilised by some producers.

Despite these developments, Namibia currently lacks officially released improved groundnut varieties. The continued reliance on informal seed systems often results in genetically impure or disease-prone seed, undermining yield potential and overall crop performance (Valombola et al., 2021). Furthermore, 75% of surveyed input suppliers reported limited awareness of the Seed and Seed Varieties Act No. 23 of 2018 **(Figure 4)**, highlighting the need for enhanced regulatory outreach and institutional support within the groundnut sector.

These findings align with Tripp and Louwaars (1997), who emphasised the importance of robust regulatory frameworks in establishing functional seed systems across sub-Saharan Africa. Strengthening Namibia's seed sector through formal variety release, certification infrastructure, and farmer education is therefore essential to improving groundnut productivity, enhancing market competitiveness, and safeguarding food safety along the value chain.

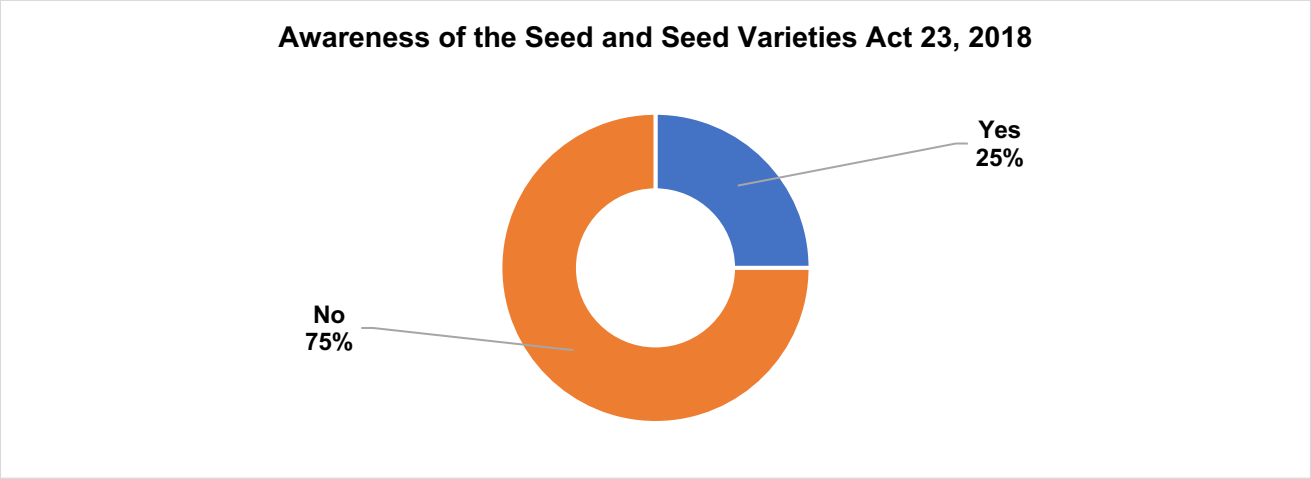

Figure 5: *Level of input suppliers' awareness of the Seed and Seed Varieties Act, 2018 in Namibia*

3.3.2 Efforts to strengthen the seed system

This study also engaged the Ministry of Agriculture, Fisheries, Water, and Land Reform (MAFWLR), which is actively involved in the research and development of groundnut varieties. Based on the findings of this study, the MAFWLR is currently working on a limited number of promising cultivars, such as NAM888/2, NAM4433, ICGV15266, ICGV02266, and NAM1747/1, with a focus on developing improved, climate-resilient, and high-yielding varieties suitable for Namibia's diverse agro-ecological zones. These research efforts aim to address the current limitations in seed quality and variety performance observed in many farming communities.

3.3.3 Food safety certification and regulatory protection

The results indicate that food safety certification among groundnut producers in Namibia remains very limited. As shown in **Figure 5**, the majority of producers (74%) operate without any form of certification, suggesting a significant gap in compliance with recognised food safety standards. Only a small proportion of producers reported having certifications such as grading procedures, GMO-free, phytosanitary, traceability, quality system, and Good Agricultural Practices (GAP), each at 4%, while 2% possessed organic certification.

The absence of Hazard Analysis and Critical Control Point (HACCP) certification underscores the need to strengthen awareness, capacity-building, and support mechanisms to help producers adopt and maintain food safety standards that enhance market access and product competitiveness.

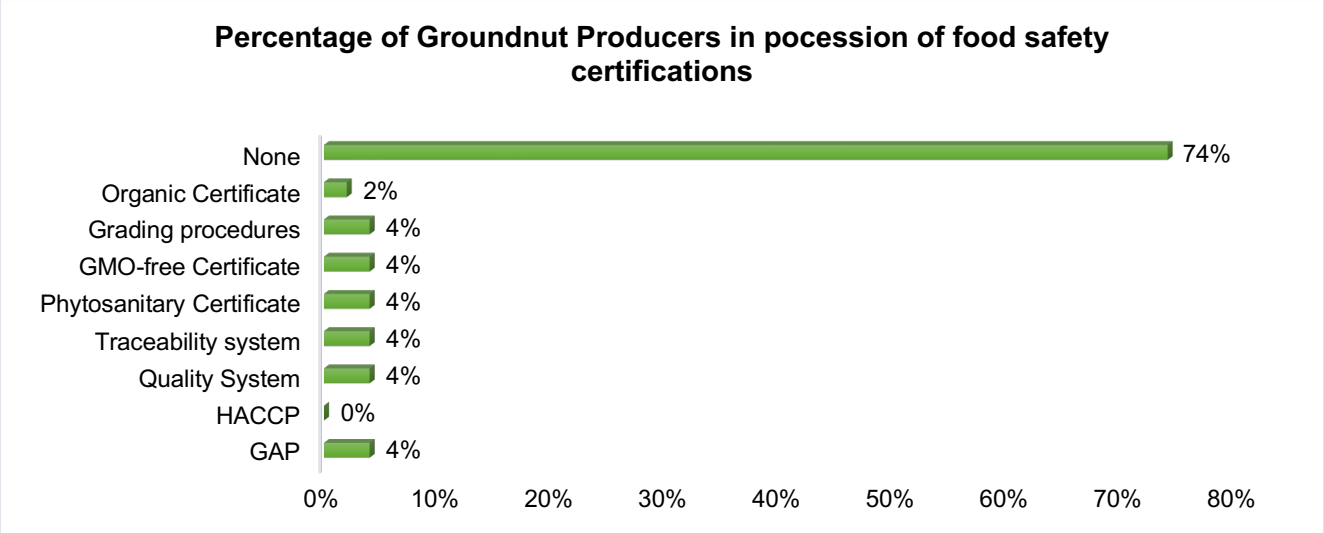

Figure 6: *Percentage of producers in possession of food safety certifications within the groundnut value chain*

As shown in **Figure 6**, the majority of traders and processors (62.5%) do not possess any food safety certifications, while only 12.5% hold HACCP, Organic, or Phytosanitary certificates. No respondents reported compliance with grading procedures, traceability systems, Good Agricultural Practices (GAP), GMO-free standards, or quality systems.

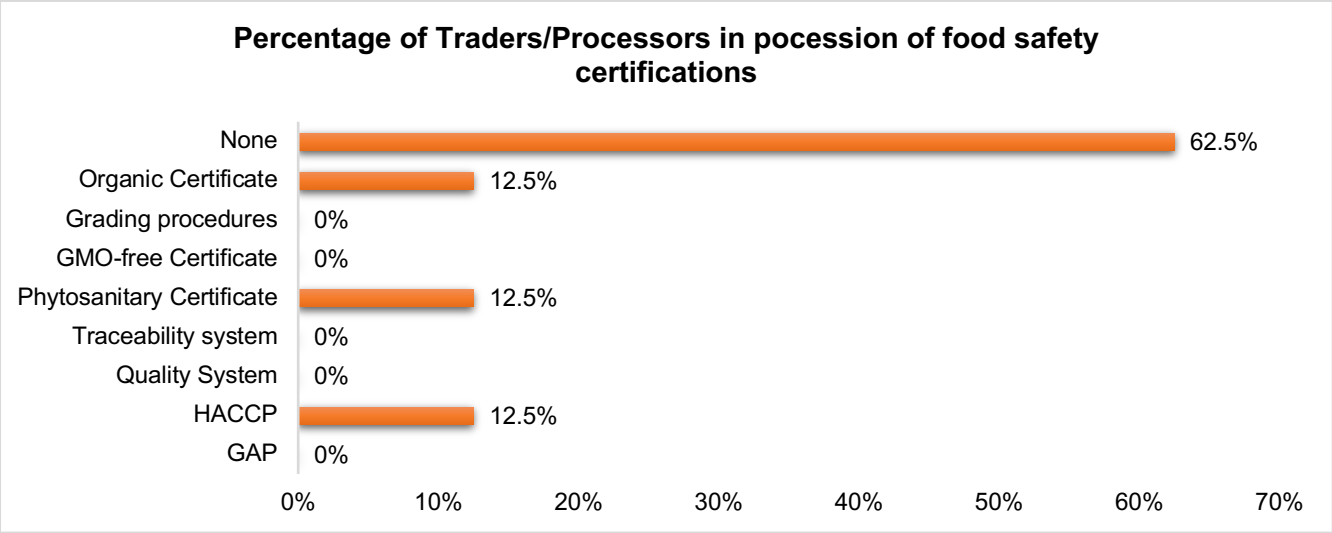

Figure 7: *Percentage of traders and processors in possession of food safety certifications within the groundnut value chain*

As illustrated in **Figure 7**, there is a complete absence of certification among respondents (100%), with no uptake reported across any of the listed categories, including HACCP, GAP, traceability systems, and phytosanitary certification.

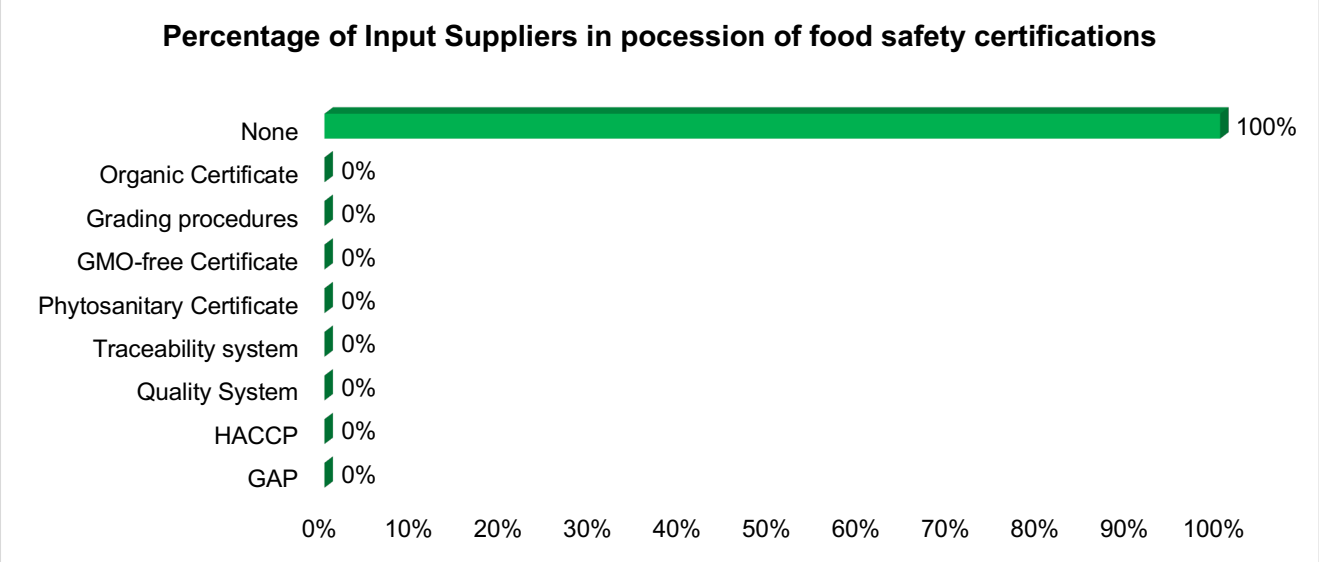

Figure 8: *Percentage of input suppliers in possession of food safety certifications within the groundnut value chain*

The findings in **Figures 6, 7, and 8** are consistent with studies such as Henson and Humphrey (2010), who emphasised that smallholder farmers in developing countries often face challenges in meeting food safety and quality standards due to high certification costs, limited technical knowledge, and weak institutional support. Similarly, Breen et al. (2024) found that low levels of food safety certification among legume producers in sub-Saharan Africa result in reduced competitiveness and limited export potential. Hence, a significant percentage of respondents (68%) expressed support for government protection

within the groundnut value chain, emphasising the need for policies that safeguard local producers and enhance market competitiveness **(Figure 9).**

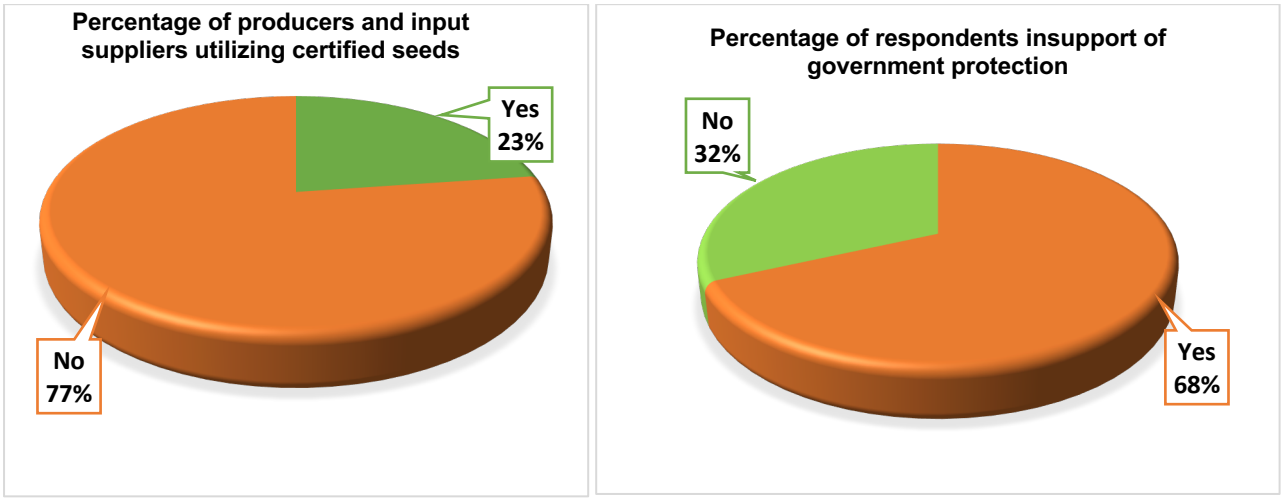

Figure 9: *Regulatory compliance and protection measures among surveyed participants*

3.4 Market information

3.4.1 Market structure, share, and prices

Understanding the market structure, share, and pricing dynamics within the groundnut value chain provides insights into the distribution channels, competitiveness, and income generation among key actors. **Figure 10** presents the distribution of groundnut market channels, highlighting the participation of producers, traders, and input suppliers in Namibia's groundnut market.

3.4.1.1 Market Channels and Distribution Patterns

The study revealed the absence of a well-structured formal market, with approximately 22% of producers channelling their harvests to export markets in South Africa. In comparison, the majority (77%) rely on informal outlets such as open markets and street vendors. Traders, including OK Foods and AGRA, predominantly source groundnuts locally rather than through imports, indicating a positive linkage and growing interdependence among stakeholders. Additionally, some producers sell directly to fellow farmers, with an estimated 66% of groundnut seed traded through open markets, 17% supplied through individual orders, and another 17% sold on streets **(Figure 10)**.

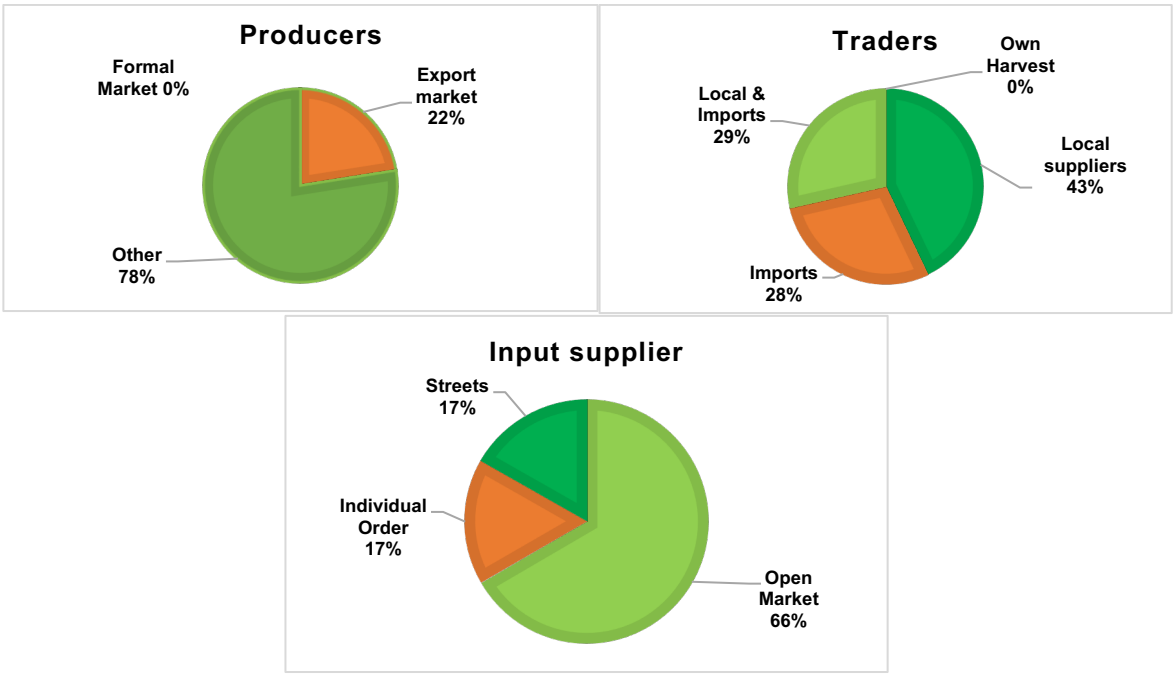

Figure 10: *Distribution of groundnut market channels among producers, traders, and input suppliers*

3.4.1.2 Exports

Figure 11 presents the annual trends in Namibia's groundnut exports from 2020 to 2024, illustrating both export quantity (in tons) and export value (in Namibian dollars). The data indicate that export volumes remained relatively low, below 1,000 tons, between 2020 and 2023, reflecting limited market participation and production constraints during this period. However, a significant surge was observed in 2024, reaching 4,008 tons.

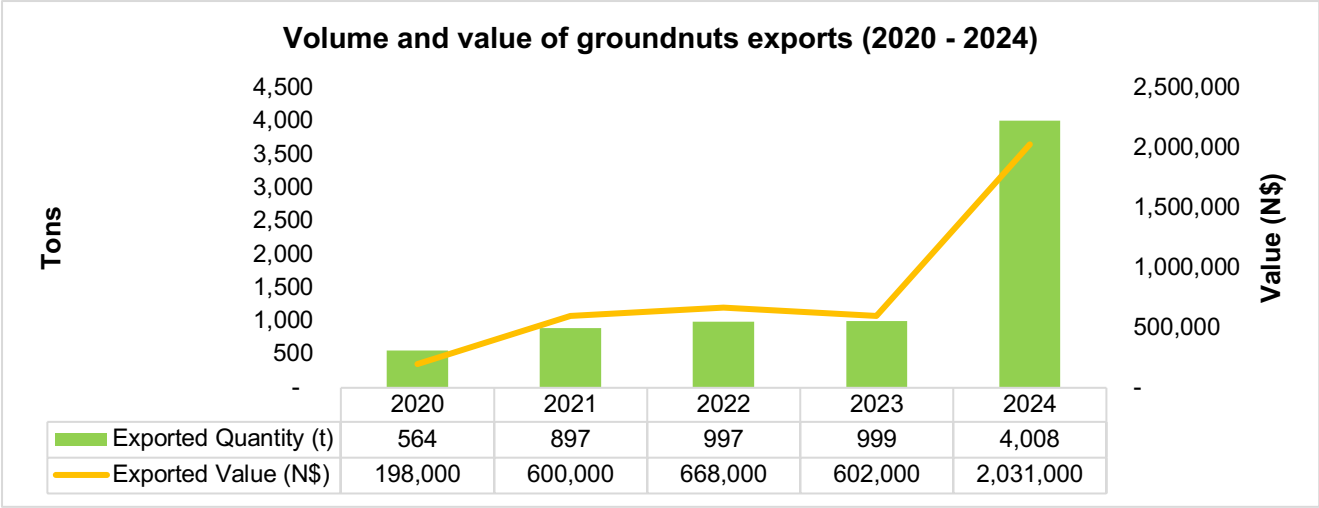

Figure 11: *Exported groundnut volume and value from 2020 to 2024*

Source: *ITC (2025)*

3.4.1.3 Price Trends

Figure 12 illustrates the variation in groundnut prices across different market channels in Namibia, reflecting how market structure influences producer incomes. The findings indicate that export markets, while offering higher prices, particularly for premium grades, are less accessible to most producers due to quality standards, grading requirements, and logistical constraints. On the other hand, informal markets such as open markets and street vendors offer lower prices but greater flexibility, providing farmers with immediate cash income and reduced transaction costs.

The price difference across grades at the export level, ranging from N$6,000.00/t for split groundnuts to N$22,000.00/t for Grade 1 and 2, highlights the importance of quality differentiation and grading systems in determining market value. Locally, the estimated N$30,000.00/t equivalent suggests that small-scale packaging and direct sales to consumers may yield higher unit prices, albeit at lower trade volumes **(Figure 12)**. Overall, these variations emphasise the fragmented nature of Namibia's groundnut market and the need for structured marketing systems to improve producers' access to profitable, sustainable markets.

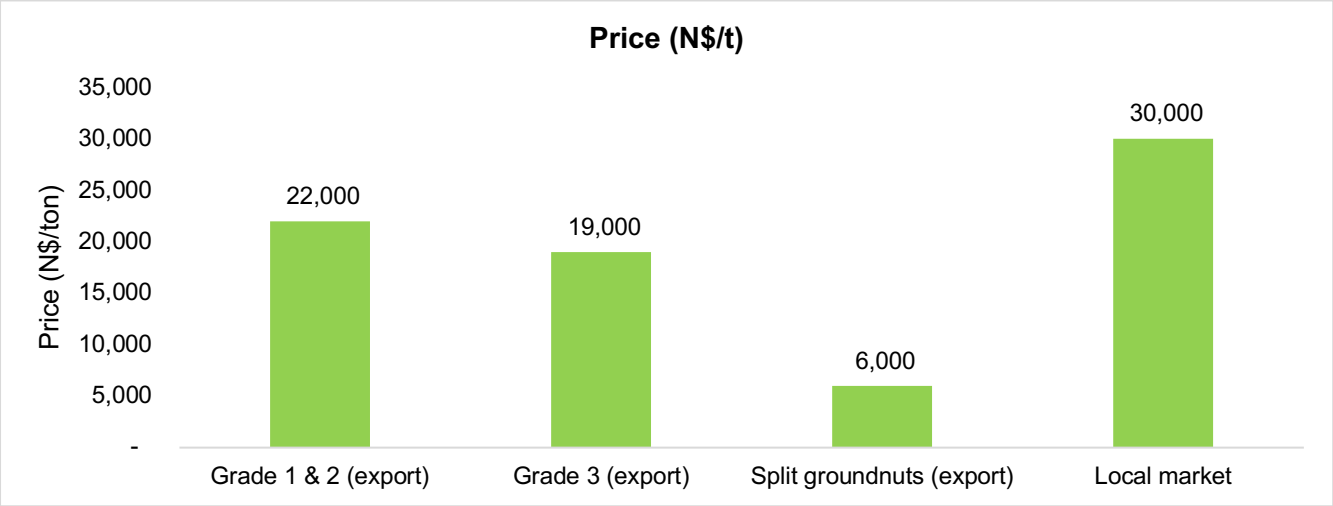

Figure 12: *Groundnut prices at export and local marketing channels in Namibia*

3.4.1.4 Groundnut value addition

Value addition is a critical strategy that enables producers to increase income by transforming raw agricultural products into processed goods (Dos-Santos, 2020). Through activities such as shelling, roasting, oil extraction, peanut butter production, and packaging, farmers can tap into higher-value markets, extend product shelf life, and reduce post-harvest losses (Kwanza, 2025). Beyond income generation, value addition strengthens rural enterprises, creates employment opportunities, and supports the development of resilient agri-food systems (De Brauw & Bulte, 2021).

Figure 13 highlights significant gaps in access to groundnut value addition services. Only 27% of the respondents reported engaging in value-added activities, primarily roasting, frying groundnuts, and processing peanut butter. The remaining 73% indicated no participation in value addition, citing barriers such as a lack of processing equipment and the absence of organised market linkages.

Although value addition remains low, the survey identified the recent launch of a peanut butter processor, one of the very few formal processing initiatives currently operating in Namibia. While still small-scale, this processor represents a positive development, demonstrating growing interest in commercial groundnut processing and the potential for developing locally branded products. The peanut butter shown in **Annex A** is packaged in a 400g container and retails at N$40.00, providing a locally produced alternative to imported products. The processor sources its groundnuts locally from the Etunda Green Scheme Irrigation Project, offering a reliable market outlet for shelled groundnuts, helping reduce post-harvest losses, and contributing to local food product diversification. However, its limited capacity and the fact that it is currently the only identified processor highlight the broader absence of diversified value-addition enterprises within the country.

As a result, most farmers continue to sell unshelled or raw groundnuts at lower prices, missing opportunities to capture greater market value. These findings highlight the need for targeted interventions, including investment in processing infrastructure, farmer training in product development, and improved access to finance and organised markets. Strengthening value-addition capacity through scaling up existing processors and promoting the establishment of new processors would enhance farmer profitability, improve Namibia's competitiveness in regional and international groundnut markets, and contribute to food safety and nutrition security.

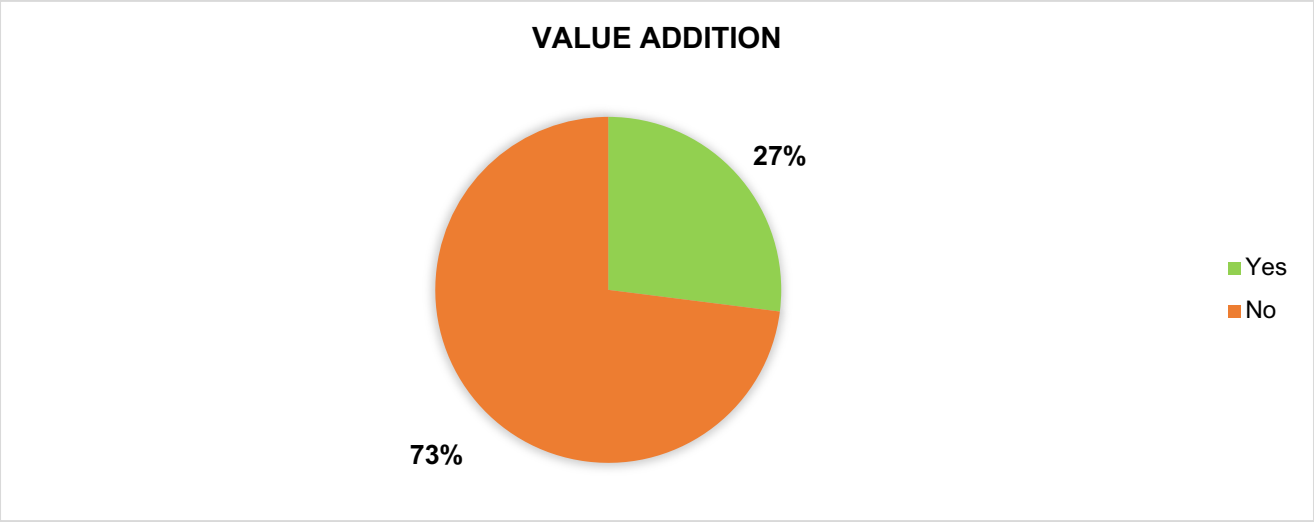

Figure 13: *Value addition engagement across the groundnut value chain actors*

3.4.2 Supply and planting agreements

The study results indicate a substantial gap between producers' current participation in formal contracts with local traders (10.4%) and their expressed willingness to engage in structured supply or planting agreements (77.8%) **(Figure 14)**. This finding suggests significant untapped potential for inclusive market coordination. Evidence from comparable contexts supports this approach. In Zambia, outgrower schemes under the Enterprise Zambia Challenge Fund improved smallholder access to inputs, training, and markets (Fisher & Roberts, 2017), while in South Africa, structured planting agreements enabled producers to meet retail and export standards through coordinated production and quality assurance protocols (BFAP, 2019). These results imply that Namibia's groundnut sector could benefit from piloting contracting models supported by cooperatives, agribusinesses, or public–private partnerships.

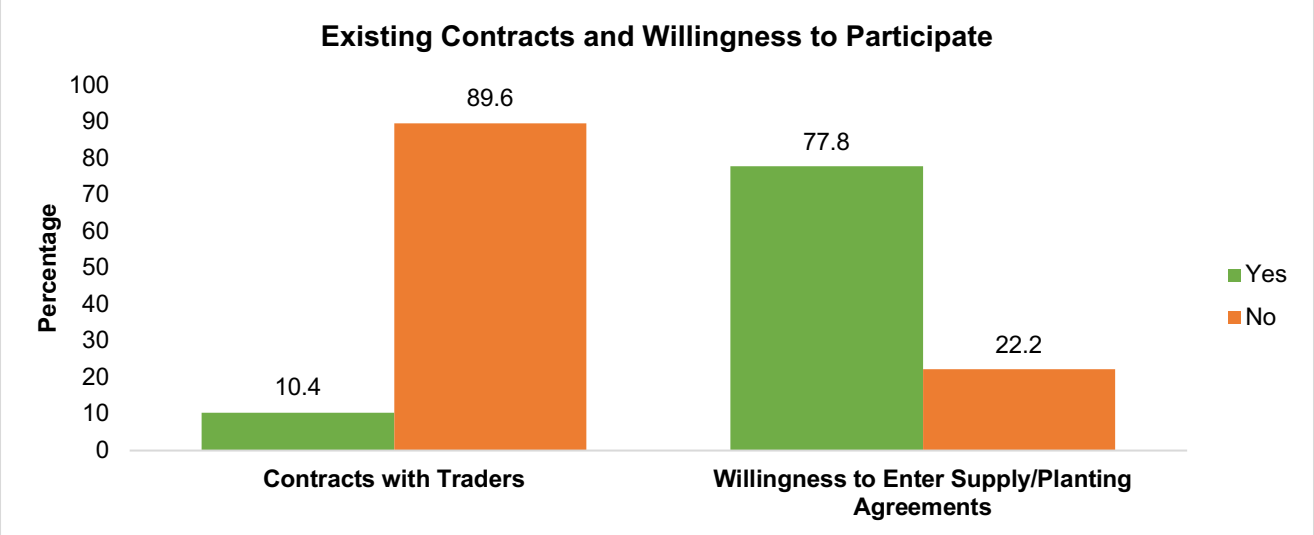

Figure 14: *Existing contracts and willingness to participate in supply and planting agreements in the groundnut value chain*

3.4.3 Groundnut post-harvest storage and infrastructure

According to Ansari et al. (2015), smallholder farmers in many countries traditionally store groundnuts in-shell in earthen pots, mud bins, bamboo baskets, or wicker containers, often reinforced with mud and cow dung, with minimal pesticide use. For extended storage, these containers are sealed with mud and supplemented with ashes, pepper, neem leaves, or other herbs to control pests. Groundnuts can be stored for up to 8–10 months for consumption or seed; however, most farmers lack adequate facilities and instead store them in bags at home (Attah, 2013).

Figure 15 highlights significant gaps in access to cold storage, packline, and packhouse infrastructure, with fewer than 20% of stakeholders confirming their availability. Producers emphasised that cold storage for groundnuts is generally not prioritised, as the crop is marketed immediately to minimise pod

damage. However, the absence of modern packhouses and packlines limits producers' ability to properly grade, clean, sort, and package groundnuts for high-value markets. Efficient packhouse and packline facilities are essential for improving product quality, reducing post-harvest losses, and meeting market standards, particularly for export.

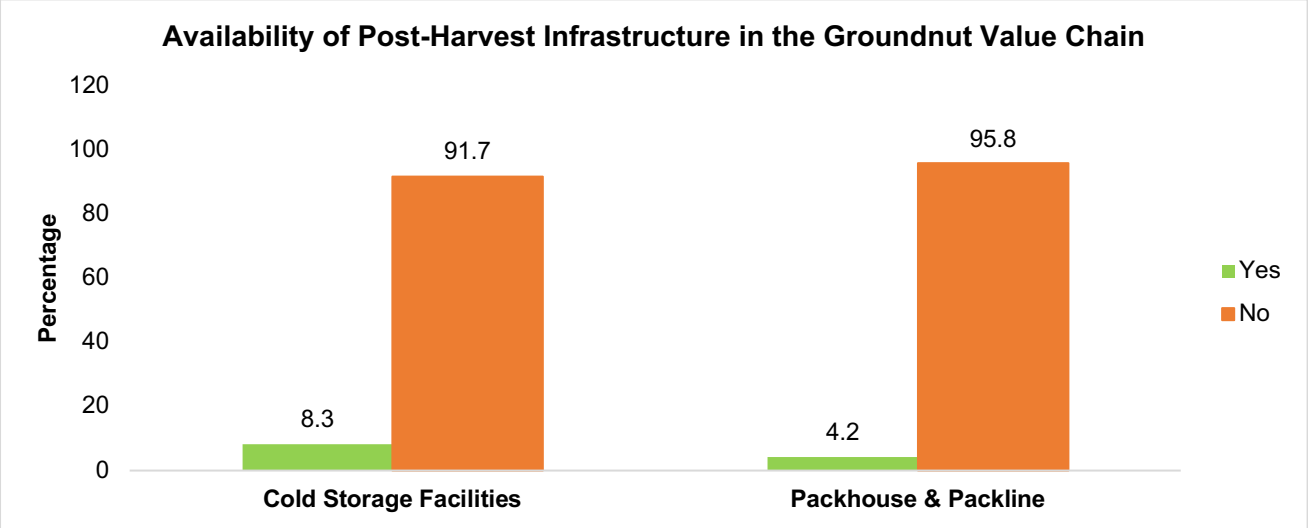

Figure 15: *Reported Accessibility of cold storage facilities, packhouse, and packline infrastructure among surveyed stakeholders in Namibia's groundnut sector*

3.4.4 Transport to the market

The study revealed that transport costs from the production site to the market are influenced by both distance and the intended market destination, whether local or export-oriented. In the local market, about 50% of respondents use their own vehicles and bear the full transport cost, averaging around N$26.00 per kilometre. Around 13.8% indicated that buyers provide the transportation; however, the cost is still absorbed by producers or input suppliers. The remaining 36.1% on hired transport services covers all expenses **(Table 5)**.

Transport costs for the export market are considerably higher due to extended distances, border procedures, and additional compliance requirements associated with international trade. In most cases, producers collaborate with transport companies or exporters to facilitate groundnut movement, though this arrangement adds to the overall cost burden.

Table 5: Transport arrangements and cost-bearing responsibilities between producers, buyers, and importers

Transport option	Description	Percentage (%)
Producer-owned transport	The producer/input supplier uses their own transport and bears all costs.	50
Buyer-provided transport	The buyer arranges and pays for transport	13.8
Buyer-provided transport, producer bears cost.	Buyer provides transport; producer/input supplier covers transport costs.	-
Importer/foreign-owned transport	Importer/foreigner uses their own transport and bears all costs.	-
For importer/foreigner-owned transport, the producer bears the cost	Importer/foreigner provides transport; producer/input supplier bears transport costs.	-
Hired transport	Producer/input supplier hires transport and bears all costs.	36.1

3.5 Financing information

Ruete (2015) emphasises that timely access to financing is essential for improving producers' living standards by enhancing the profitability of their operations. In the agricultural sector, financial resources are required for a wide range of purposes, including daily operational expenses, procurement of implements and machinery, acquisition of high-quality seeds, investment in storage infrastructure, and the implementation of effective marketing strategies. However, access to credit remains uneven, particularly for smallholders, due to collateral requirements and limited financial literacy. To bridge this gap, innovative financing models and inclusive credit schemes are needed.

Figure 16 illustrates the distribution of financing sources utilised by producers to establish groundnut enterprises. A substantial majority (92.8%) relied on personal funds or savings, while formal banking institutions accounted for only 2.4%. Notably, private sector support was absent (0%), and other sources contributed a modest 4.8%. These findings underscore a significant gap in institutional and private sector engagement in early-stage agricultural financing, highlighting the need for more inclusive and accessible financial mechanisms to support smallholder investment.

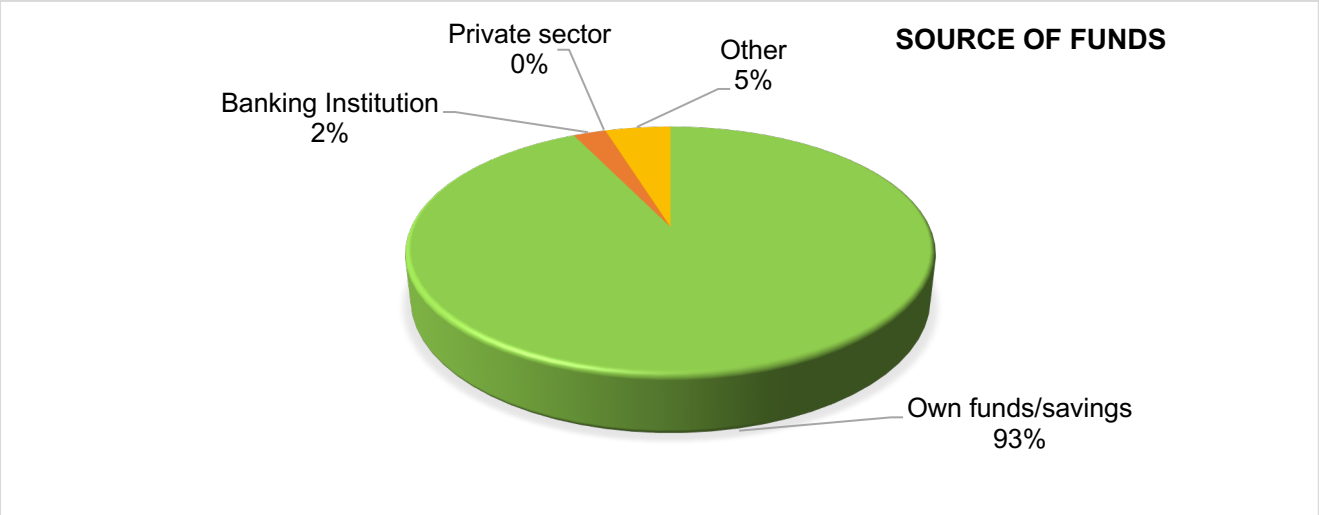

Figure 16: *Source of financing for the groundnut business setup*

3.6 Training and industry affiliation

Training plays a vital role in enabling producers to integrate the latest scientific advances and technological tools into their production systems. It enhances not only their skills but also their attitudes and practical know-how, thereby fostering greater adoption of agricultural innovations (Gorfad et al., 2022). However, the data in Figure 17 indicate low levels of engagement in capacity-building initiatives in Namibia's groundnut sector. Only 17.5% of respondents reported access to training or mentorship, while just 26.1% indicated membership in a farmer union or association. These results highlight significant institutional gaps that limit knowledge transfer, collective organisation, and coordinated participation in formal markets.

Figure 17: *Farmer's participation in training/mentorship and union/association membership within Namibia's groundnut value chain*

4. MAPPING OF KEY ACTORS ALONG THE GROUNDNUT VALUE CHAIN

4.1 Value chain actors and their functions

Figure 18 presents a structured overview of the key actors within Namibia's groundnut value chain, derived from primary data collected in this study. It illustrates the functional roles of input suppliers, producers, aggregators, traders or processors, and consumers, while emphasising institutional linkages and coordination mechanisms. The value chain map serves as a diagnostic tool to identify systemic gaps, integration opportunities, and leverage points for targeted interventions. The subsequent discussion elaborates on each segment of the chain, tracing the transformation of groundnuts from seed to final product and examining stakeholder roles, production dynamics, aggregation practices, processing capacity, and market access.

Input suppliers: The groundnut value chain begins with the supply of essential agricultural inputs by input suppliers, including seeds, fertilisers, pesticides, farm equipment, and tractor services. The primary agro-input used across the study areas is seed, predominantly comprising landraces sourced from farmers' previous harvests. These seeds are commonly sold in local open markets, along streets, or through individual orders. The study revealed that 77% of groundnut producers source their seeds from previous harvests, aligning with the findings of Owusu-Adjei, Baah-Mintah, and Salifu (2017).

Groundnut producers: Based on this study, groundnut cultivation in Namibia is undertaken by both smallholder and commercial producers. Smallholders, who constitute the majority of producers and are predominantly women (59%), form the backbone of production. Their farming operations are primarily characterised by limited access to mechanisation and a heavy reliance on manual labour. In contrast, commercial producers operate at a larger scale, with better access to agricultural inputs, markets, and mechanised equipment. Additionally, the study revealed that production activities typically include land preparation, planting, crop management, harvesting, and shelling. Groundnuts are primarily grown under rainfed conditions. The land allocated to groundnut production varies across production zones, influenced by agroecological conditions, rainfall patterns and distribution, and farm size. Small-scale producers cultivate approximately 0.3-8 hectares per household, while large-scale producers manage up to 100 hectares.

Traders and processors: Local traders, such as OK Foods and AGRA, purchase groundnuts, either shelled or unshelled, directly from producers. Processors contribute to value addition through the production of roasted groundnuts, peanut butter processing, and animal feed. However, processing capacity in Namibia remains underdeveloped, thereby constraining production scale and limiting product diversification. Groundnuts are typically traded either at the farm gate or in local markets within the community or neighbouring areas, often through retailers and informal vendors.

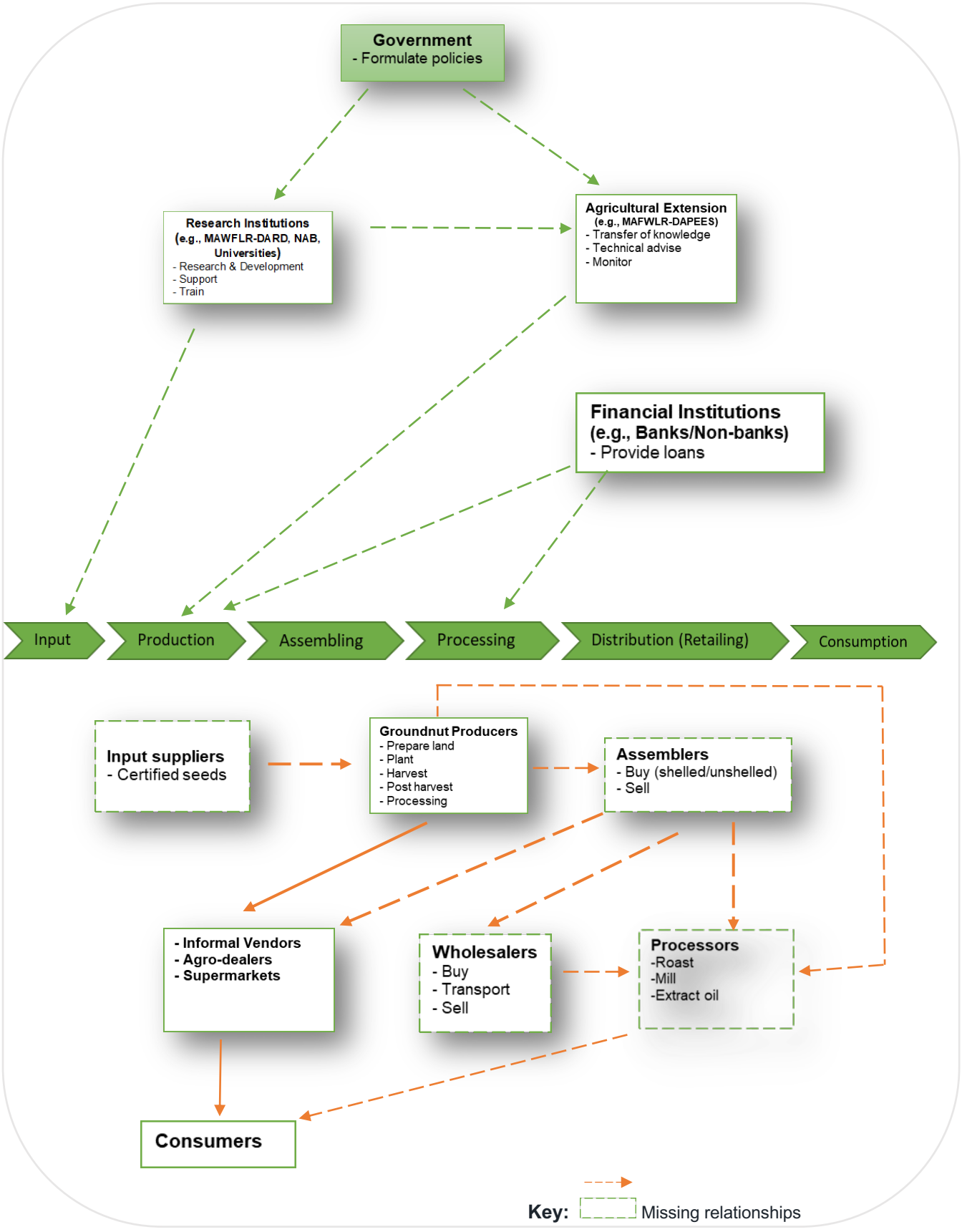

Figure 18: *Groundnut Value Chain Map for Namibia (Source: Survey Data, 2024)*

4.2 Key challenges and opportunities within the groundnut value chain

This subsection presents the key challenges and opportunities identified by various actors within Namibia's groundnut value chain. The insights highlight constraints across production, processing, and marketing, as well as potential areas for growth, investment, and value addition to strengthen the sector's competitiveness.

A. Producers

Table 6: *Key challenges and opportunities identified by producers*

Challenges	Opportunities
✓ Lack of access to quality, improved, and locally adapted seed varieties ✓ High input and labour costs, with heavy reliance on manual labour ✓ Limited access to ploughing services and mechanisation, delaying land preparation and planting ✓ Pests and soil-borne nematodes affecting crop health ✓ Poor access to irrigation and water sources ✓ Inadequate training and extension support on best agronomic practices ✓ Variation in soil types affecting productivity, without recommendations	✓ Adoption of improved seed varieties and climate-smart farming practices to boost productivity ✓ Intercropping and crop rotation for soil fertility improvement and sustainability ✓ Access to new markets through organised cooperatives or associations ✓ Possibility of accessing subsidies and grants to reduce production costs ✓ Contribution to household food security through high-protein nutrition

B. Input suppliers

***Table 7**: Key challenges and opportunities identified by input suppliers*

Challenges	Opportunities
✓ Lack of certified seed ✓ Limited collaboration between research institutions and the private sector for improved input development	✓ Expansion of seed production and distribution networks for improved varieties ✓ Potential collaboration with research institutions for variety development ✓ Market growth through the supply of affordable and locally relevant inputs ✓ Potential investment in local seed multiplication and agro-dealer systems

C. Traders/Processors

***Table 8:** Key challenges and opportunities identified by traders/processors*

Challenges	Opportunities
✓ Lack of capacity building ✓ Poor market infrastructure and transport systems, especially in rural areas ✓ Weak linkages between producers and buyers ✓ Lack of standardised pricing mechanisms and market information systems ✓ Low production volumes limit consistent supply ✓ Limited value addition and absence of local processing plants	✓ Increasing demand for groundnuts and derived products both locally and regionally ✓ Opportunity to develop standardised grading and pricing systems ✓ Value addition through processing, packaging, and branding ✓ Potential for export to regional markets with improved quality control ✓ Job creation along the marketing and processing chain

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Groundnut production in Namibia has significant potential to enhance food security, improve rural livelihoods, and promote agricultural diversification. The findings of this study indicate that production is predominantly undertaken by smallholder producers, particularly women, who constitute the majority. Cultivation remains heavily reliant on rain-fed systems, with limited access to irrigation and minimal use of certified seed and fertilisers. While Namibia produces groundnuts both for local consumption and export, overall productivity remains low, and national demand continues to be supplemented by imports from neighbouring countries.

The value chain analysis further reveals several structural challenges, including inadequate access to quality inputs, limited value addition and processing infrastructure, weak market linkages, and poor storage and transportation facilities. Despite these challenges, the sector demonstrates profitability due to its relatively low input requirements compared to other crops. With targeted interventions, the Namibian groundnut subsector holds strong potential to evolve into a competitive and sustainable industry, contributing meaningfully to national self-sufficiency and regional trade.

5.2 Recommendations

To strengthen the groundnut subsector and unlock its full potential, the following recommendations are proposed:

- ✓ **Improve access to high-quality seeds:** The Ministry of Agriculture, Fisheries, Water, and Land Reform (MAFWLR) and the Namibian Agronomic Board (NAB) should strengthen seed systems by promoting certified groundnut varieties adapted to Namibian agroecological zones, as well as enhance farmer awareness of the Seed and Seed Varieties Act 23 of 2018 to encourage the adoption of quality seed.
- ✓ **Expand market opportunities:** The NAB and partners should conduct comprehensive assessments of local and export markets to identify demand-driven opportunities, as well as facilitate support structured supply contracts with regional buyers, such as South African processors, to provide producers with more secure and predictable market access.
- ✓ **Promote value addition and processing:** The MAFWLR and the private sector should invest in agro-processing infrastructure to increase value addition through products such as peanut butter, groundnut oil, flour, and animal feed, as well as encourage cooperatives and small and medium-sized enterprises (SMEs) to engage in processing, thereby increasing farm-level incomes and generating rural employment.

- ✓ **Support farmer and processor capacity building:** The MAFWLR and the NAB should provide targeted training on good agricultural practices, integrated pest management, and opportunities in organic certification, as well as promote inclusive participation of women and youth in groundnut production and agribusiness through tailored extension services and empowerment programmes.
- ✓ **Leverage policy and regional trade frameworks:** The NAB should align national groundnut development strategies with broader regional initiatives such as the African Continental Free Trade Area (AfCFTA) to expand market access, as well as introduce fiscal and financial incentives to attract private-sector investment in groundnut production, processing, and marketing.

ANNEXES

Annexe A: Locally processed peanut butter packaged in 400g containers

Adapted from Langa's Agribusiness Investment cc. (2025)

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